



A CLINICAL PROFILE AND OUTCOME ANALYSIS OF HYPONATREMIA IN A TERTIARY CARE HOSPITAL

Internal Medicine

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ABSTRACT

Background: Hyponatremia is the most frequently encountered electrolyte disorder in hospitalized patients, contributing to significant morbidity and mortality. The condition is often secondary to systemic illnesses such as hypertension, diabetes, and cardiac failure. This study evaluates the clinical profile, severity, and outcomes of hyponatremic patients in a tertiary care setting. **Objectives:** 1) To analyze the comorbid conditions commonly associated with hyponatremia. 2) To determine the primary causes of hospital admission in these patients. 3) To assess the impact of hyponatremia severity on hospital stay and clinical outcomes. **Methods:** A prospective observational study was conducted at Sir T. Hospital, Bhavnagar, over six months. 100 patients diagnosed with serum sodium levels <135 mEq/L were included. Data on comorbidities, admission causes, hyponatremia severity, hospital stay, and patient outcomes were analyzed. Ethics Committee Government Medical College, Bhavnagar (EC Number: 1190/2022). **Results:** Comorbidities: Hypertension (58%) and diabetes mellitus (55%) were the most common. Primary Admission Causes: Metabolic encephalopathy (27%) was the leading cause of hospitalization. Severity Distribution: Moderate (74%) and Severe (24%) cases were dominant. Outcomes: 68% of patients were discharged with medication, while the mortality rate was 8%, primarily in severe cases. **Conclusion:** Hyponatremia is associated with prolonged hospitalization and adverse outcomes, especially in the presence of multiple comorbidities. Early detection and effective electrolyte correction strategies are crucial in improving patient prognosis.

KEYWORDS

Hyponatremia, Hypertension, severity

INTRODUCTION

Hyponatremia, defined as serum sodium levels below 135 mEq/L, is a common electrolyte disorder affecting up to 22% of hospitalized patients [1]. It results from impaired water excretion, inappropriate antidiuretic hormone (ADH) secretion, or sodium loss [2].

The clinical presentation varies from asymptomatic cases to severe neurological dysfunction, including seizures, coma, and even death [3]. Several studies have linked hyponatremia severity with longer hospital stays, increased morbidity, and higher in-hospital mortality rates [4].

This study aims to evaluate the association between comorbidities, admission causes, hyponatremia severity, and patient outcomes in a tertiary care hospital.

MATERIALS AND METHODS

Study Type: Prospective observational study

Location: General Medicine Ward, Sir T. Hospital, Bhavnagar.

Duration: Six months

Ethical Approval: Ethics Committee Government Medical College, Bhavnagar (EC Number: 1190/2022).

Inclusion Criteria:

- Adults ≥ 18 years diagnosed with hyponatremia (<135 mEq/L).
- Patients who provided informed consent.

Data Collection And Analysis

The study recorded patient demographics, comorbidities, primary admission causes, sodium levels at admission and discharge, hospital stay duration, and patient outcomes by using case record form. Data were analyzed using Microsoft Excel, with categorical variables expressed as percentages and continuous variables as mean $\pm$ standard deviation.

RESULT AND DISCUSSION:

Demographic Distribution: Hyponatremia was more prevalent in males (57%), with the elderly population (aged 66–80 years) accounting for 37% of total cases, highlighting a higher risk among aging males.

Hospital Stay: Severe cases had a significantly longer duration (mean:

18 days) compared to mild cases (6 days).

Table – 1 Various Co-morbidities In Study Participants (n=100)

Co-morbidities	Number of patients
Hypertension	58
Diabetes Mellitus	55
Hypothyroidism	23
Chronic Heart failure	10
Chronic Kidney Disease	5
Psychiatric disorder	3
Benign Prostatic Hyperplasia	2
Dyslipidemia	2
Osteoporosis	2
Others	9

Comorbidities: Hypertension (58%) and diabetes mellitus (55%) were the most common [4].

Table – 2: Causes Of Admission To The Hospital, Amongst Study Participants (n=100)

Causes of admission	Number of patients
Metabolic encephalopathy	27
Cardiac failure/ acute coronary syndrome/ pericardial effusion	12
Acute infective cause	5
Viral fever	5
TB (pulmonary/meningitis/miliary)	5
Acute bronchitis/ pneumonia	5
Renal failure (acute/ chronic)	4
Acute gastroenteritis	4
Hypopituitarism	4
Complicated diabetes mellitus	3
Stroke (hemorrhagic/ ischemic)	3
Chronic diarrhea	2
Chronic Kidney Disease	2
Chronic Liver Disease /hepatic encephalopathy	2
Heat stroke	2
Guillain Barre Syndrome	2
Seizure disorder	2

Septic shock	2
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Primary Admission Causes: Metabolic encephalopathy (27%) [3] and cardiac failure (12%) [5] was the leading cause of hospitalization.

Table-3 Co-relation With The Severity Of Hyponatremia (on Admission) (n=100)

Outcome of the patient	Severity of hyponatremia (mEq/L)		
	126-134 (n=2)	116-125 (n=74)	105-115 (n=24)
Discharged with medication	1	48	19
Discharged	1	18	1
DAMA	0	4	0
Death	0	4	4

Outcomes: 68% of patients were discharged with medication, while the mortality rate was 8%, primarily in severe cases [6].

CONCLUSION

Hyponatremia is a clinically significant electrolyte imbalance, particularly in patients with underlying cardiovascular and metabolic conditions. Its severity is directly associated with increased hospitalization and poorer outcomes. Early detection and aggressive correction strategies can reduce complications and improve survival rates.

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